Re: DSS14 KHEMT Feed Plate

From: "Manuel M. Franco" <Manuel.M.Franco@jpl.nasa.gov>
To: RRose@gdscc.nasa.gov, DHofhine@gdscc.nasa.gov, kuiper@jpl.nasa.gov
CC: Lawrence.Teitelbaum@jpl.nasa.gov, Charles.J.Naudet@jpl.nasa.gov, JVanbrimmer@gdscc.nasa.gov, BSwink@gdscc.nasa.gov, GBury@gdscc.nasa.gov, TMedeiros@gdscc.nasa.gov, KMassey@gdscc.nasa.gov, GKauffman@gdscc.nasa.gov, JMason@gdscc.nasa.gov, MAlvarez@gdscc.nasa.gov, GBury@gdscc.nasa.gov, DKelley@gdscc.nasa.gov
Date: 2005-10-28 03:15

Dear Randy and Doug,

Thank you all for the efforts on the re-installation of the prototype K-band system on DSS-14. Below are just some thoughts on the re-installation.

The feeds and feeds mounting plate were manually labeled to help with feeds/plate orientation during their installation in the cone. I do not remember if the HEMT top plate is labeled on this unit, but one input should have a fixed 1/4 wave adapter oriented for LCP polarization. This is the OFF/Axis path.

We should have in the cone, or in the Radio Astronomy area, 4 ea 1/4 X ~ 20 inches threaded rods that were previously in the installation. Once (already is) the feeds/plate are secured, installing the rods close to equally spaced on the bottom of the plate will support the LNA alignment.

I would install the sliding load and 2 inch spacer on the feeds as shown on attachment "feeds and load 1.jpg" before the LNA. Both parts need 1/8 inch stainless steel dowel pins, 2 ea minimum per interface. There is room for 4 as seen on attachment "load 4.jpg" and 8 ea 4/40 X 1/2 inch allen head screws with flat and lock washers. The load controller for this system used to look like the one on attachment "control_box_closed.jpg".

The LNA dewar needs a couple of brackets (hopefully still around there) installed on the top plate. The brackets should have 1/4 inch clearance through holes for the threaded rods to pass through. With the LNA inputs (inputs with round spacers) close to, ~ 1/2 inch, the sliding load assembly and the spacer on the off/axis feed, 1/4 inch flat washers - nuts and a 7/16 wrench/socket may be used to level/align and connect the flanges. All interfaces require a minimum of 2/flange dowel pins. We should have no misalignment between the feed horns. We also need some brackets at the bottom ring of the LNA dewar. These bottom brackets should be bolted to the cone beams (old brackets may be around).

I do not think that the helium lines have been used since the removal of the K-band LNA, now at JPL. Therefore, please flush the lines and check for vacuum leaks.

Cheers,

Manuel M. Franco
e-mail : Manuel.M.Franco@jpl.nasa.gov
voice mail : (818) 354-3417
fax mail : (818) 393-6743
snail mail : 4800 Oak Grove Drive, MS 238-725, Pasadena CA 91109-8099


feeds and load 1.JPG


load 4.JPG


Control_box_closed.jpg